

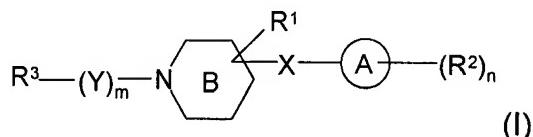
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

What is claimed is:

1. (Currently Amended) A compound of formula (I)



or a pharmaceutically acceptable derivative thereof, wherein:

X is a C₁₋₅ alkylene chain, wherein said X is optionally substituted by one or more =O, =S, -S(O)_r, alkyl, or halogen and wherein said C₁₋₅ alkylene chain may optionally have 0-3 heteroatoms selected from oxygen, phosphorus, sulfur, or nitrogen;

Ring A is a saturated, partially saturated or aromatic 3-7 monocyclic or 8-10 8-membered bicyclic ring having one ring nitrogen and 0-4 additional heteroatoms selected from oxygen, phosphorus, sulfur, or nitrogen;

Ring B has an oxygen atom in addition to the depicted nitrogen;

R¹ is alkyl optionally substituted by one or more R⁷, alkenyl optionally substituted by one or more R⁷, alkynyl optionally substituted by one or more R⁷, cycloalkyl optionally substituted by one or more R⁸, heterocyclyl optionally substituted by one or more R⁸, heteroaryl optionally substituted by one or more R⁶, or aryl phenyl optionally substituted by one or more R⁶; or R¹ and X taken together form a saturated, partially saturated or aromatic 5-6 membered ring having 0-3 heteroatoms selected from oxygen, phosphorus, sulfur, or nitrogen that is fused to Ring A;

each R² is independently selected from the group consisting of OR⁰,

-C(O)-R⁰, -S(O)₂-R⁰, -C(O)-N(R⁰)₂, -S(O)₂-N(R⁰)₂, -(CH₂)_a-N(R⁰)(-V_b-R⁺), -(CH₂)_a-(-V_b-R⁺), halogen, alkyl optionally substituted by one or more R⁷, alkenyl optionally substituted by one or more R⁷, alkynyl optionally substituted by one or more R⁷, aryl optionally substituted by one or more R⁶, heteroaryl optionally substituted by one or more R⁶, cycloalkyl optionally substituted by one or more R⁸, and heterocyclyl optionally substituted by one or more R⁸; and two adjacent R²'s on Ring A are optionally taken together to form a fused, saturated, partially saturated or aromatic 5-6 membered ring having 0-3 heteroatoms selected from oxygen, phosphorus, sulfur, or nitrogen; or two geminal R²'s are optionally taken together to form a spiro, saturated, partially saturated or aromatic 5-6 membered ring having 0-3 heteroatoms selected from oxygen, phosphorus, sulfur, or nitrogen, said fused or spiro ring being optionally substituted by one or more R⁸;

each a independently is 0-3;

each b independently is 0 or 1;

V is -C(O)-, -C(O)O-, -S(O)₂-, or -C(O)-N(R⁰)-;

R⁺ is alkyl, cycloalkyl, aralkyl, aryl, heteroaryl, heteroaralkyl, or heterocyclyl, wherein said R⁺ is optionally substituted by one or more R⁸;

m is 0 or 1;

n is 0-5;

R³ is H, -N(R⁰)₂, -N(R⁰)C(O)R⁰, -CN, halogen, CF₃, alkyl optionally substituted by one or more groups selected from R⁷ or -S-aryl optionally substituted by

-(CH₂)₁₋₆-N(R⁰)SO₂(R⁰), alkenyl optionally substituted by one or more groups selected from R⁷ or -S-aryl optionally substituted by -(CH₂)₁₋₆-N(R⁰)SO₂(R⁰), alkynyl optionally substituted by one or more groups selected from R⁷ or -S-aryl optionally substituted by -(CH₂)₁₋₆-N(R⁰)SO₂(R⁰), cycloalkyl or carbocyclyl optionally substituted by one or more R⁸, aryl optionally substituted by one or more R⁶, heteroaryl optionally substituted by one or more R⁶, or heterocyclyl optionally substituted by one or more R⁸;

Y is ~~alkyl, alkenyl, alkynyl, (CR⁴R⁵)_p-~~, -C(O)-, -C(O)C(O)-, -C(S)-, ~~-O-(CH₂)₀₋₄-C(O)-, (CH₂)₀₋₄-C(O)-O-, N(R⁰)-C(O)-, C(O)-N(R⁰)-, N(R⁰)-C(S)-,~~

~~-S(O)_t, -O-C(=N-CN), -O-C(=N-R⁰), -C(=N-CN)-O, -C(=N-R⁰)-O, -C(=N-CN)-S,~~
~~-S-C(=N-CN), -N(R⁰)-C(=N-CN), -C(=N-CN), -N(R⁰)-C[-N-C(O)-R⁰],~~
~~-N(R⁰)-C[=N-S(O)-R⁰], -N(R⁰)-C(=N-OR⁰), -N(R⁰)-C(=N-R⁰), or -C(=N-R⁰);~~
~~each R⁴ is independently H, alkyl optionally substituted by R⁷, alkenyl optionally substituted by R⁷, or alkynyl optionally substituted by R⁷;~~
~~each R⁵ is independently selected from H, C(O)-OR⁶, C(O)-N(R⁰)₂,~~
~~-S(O)₂-N(R⁰)₂, -S(O)₂-R⁰, aryl optionally substituted by R⁶, or heteroaryl optionally substituted by R⁶;~~
~~p is 1-5;~~
 each t independently is 1 or 2;
 each R⁶ is independently selected from the group consisting of halogen, -CF₃, -OCF₃, -OR⁰, -(CH₂)₁₋₆-OR⁰, -SR⁰, -(CH₂)₁₋₆-SR⁰, -SCF₃, -R⁰, methylenedioxy, ethylenedioxy, -NO₂, -CN, -(CH₂)₁₋₆-CN, -N(R⁰)₂, -(CH₂)₁₋₆-N(R⁰)₂, -NR⁰C(O)R⁰, -NR⁰(CN), -NR⁰C(O)N(R⁰)₂, -NR⁰C(S)N(R⁰)₂, -NR⁰CO₂R⁰, -NR⁰NR⁰C(O)R⁰, -NR⁰NR⁰C(O)N(R⁰)₂, -NR⁰NR⁰CO₂R⁰, -C(O)C(O)R⁰, -C(O)CH₂C(O)R⁰, -(CH₂)₀₋₆CO₂R⁰, -O-C(O)R⁰, -C(O)R⁰, -C(O)N(R⁰)N(R⁰)₂, -C(O)N(R⁰)₂, -C(O)N(R⁰)OH, -C(O)N(R⁰)SO₂R⁰, -OC(O)N(R⁰)₂, -S(O)_tR⁰, -S(O)_t-OR⁰, -S(O)_tN(R⁰)C(O)R⁰, -S(O)_tN(R⁰)OR⁰, -NR⁰SO₂N(R⁰)₂, -NR⁰SO₂R⁰, -C(=S)N(R⁰)₂, -C(=NH)-N(R⁰)₂, -(CH₂)₁₋₆-C(O)R⁰, -C(=N-OR⁰)-N(R⁰)₂, -O-(CH₂)₀₋₆-SO₂N(R⁰)₂, -(CH₂)₁₋₆NHC(O)R⁰, and -SO₂N(R⁰)₂ wherein the two R⁰'s on the same nitrogen are optionally taken together to form a 5-8 membered saturated, partially saturated, or aromatic ring having additional 0-4 heteroatoms selected from oxygen, phosphorus, nitrogen, or sulfur;
 each R⁷ is independently selected from the group consisting of halogen, -CF₃, -R⁰, -OR⁰, -OCF₃, -(CH₂)₁₋₆-OR⁰, -SR⁰, -SCF₃, -(CH₂)₁₋₆-SR⁰, aryl optionally substituted by R⁶, methylenedioxy, ethylenedioxy, -NO₂, -CN, -(CH₂)₁₋₆-CN, -N(R⁰)₂, -(CH₂)₁₋₆-N(R⁰)₂, -NR⁰C(O)R⁰, -NR⁰(CN), -NR⁰C(O)N(R⁰)₂, -NR⁰C(S)N(R⁰)₂,

-NR⁰CO₂R⁰, -NR⁰NR⁰C(O)R⁰, -NR⁰NR⁰C(O)N(R⁰)₂, -NR⁰NR⁰CO₂R⁰, -C(O)C(O)R⁰, -C(O)CH₂C(O)R⁰, -(CH₂)₀₋₆-CO₂R⁰, -C(O)R⁰, -C(O)N(R⁰)N(R⁰)₂, -C(O)N(R⁰)₂, -C(O)N(R⁰)OH, -OC(O)R⁰, -C(O)N(R⁰)SO₂R⁰, -OC(O)N(R⁰)₂, -S(O)_tR⁰, -S(O)_tOR⁰, -S(O)_tN(R⁰)C(O)R⁰, -S(O)_tN(R⁰)OR⁰, -NR⁰SO₂N(R⁰)₂, -NR⁰SO₂R⁰, -C(=S)N(R⁰)₂, -C(=NH)-N(R⁰)₂, -(CH₂)₁₋₆-C(O)R⁰, -C(=N-OR⁰)-N(R⁰)₂, -O-(CH₂)₀₋₆-SO₂N(R⁰)₂, -(CH₂)₁₋₆-NHC(O)R⁰, and -SO₂N(R⁰)₂ wherein the two R⁰'s on the same nitrogen are optionally taken together to form a 5-8 membered saturated, partially saturated, or aromatic ring having additional 0-4 heteroatoms selected from oxygen, phosphorus, nitrogen, or sulfur;

each R⁸ is independently selected from R⁷, =O, =S, =N(R⁰), and =N(CN);

each R⁰ is independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, carbocyclalkyl, aryl, heteroaryl, aralkyl, heteroaralkyl, heterocyclyl, or heterocyclalkyl, wherein each member of R⁰ except H is optionally substituted by one or more R*, OR*, N(R*)₂, =O, =S, halo, CF₃, NO₂, CN, -C(O)R*, -CO₂R*, -C(O)-aryl, -C(O)-heteroaryl, -C(O)-aralkyl, -S(O)_taryl, -S(O)_t-heteroaryl, -NR^{*}SO₂R*, -NR^{*}C(O)R*, -NR^{*}C(O)N(R*)₂, -N(R*)C(S)N(R*)₂, -NR^{*}CO₂R*, -NR^{*}NR^{*}C(O)R*, -NR^{*}NR^{*}C(O)N(R*)₂, -NR^{*}NR^{*}CO₂R*, -C(O)C(O)R*, -C(O)CH₂C(O)R*, -C(O)N(R*)N(R*)₂, -C(O)N(R*)₂, -C(O)NR^{*}SO₂R*, -OC(O)N(R*)₂, -S(O)_tR*, -NR^{*}SO₂N(R*)₂, and -SO₂N(R*)₂ wherein the two R*'s on the same nitrogen are optionally taken together to form a 5-8 membered saturated, partially saturated or aromatic ring having additional 0-4 heteroatoms selected from oxygen, phosphorus, nitrogen or sulfur; and

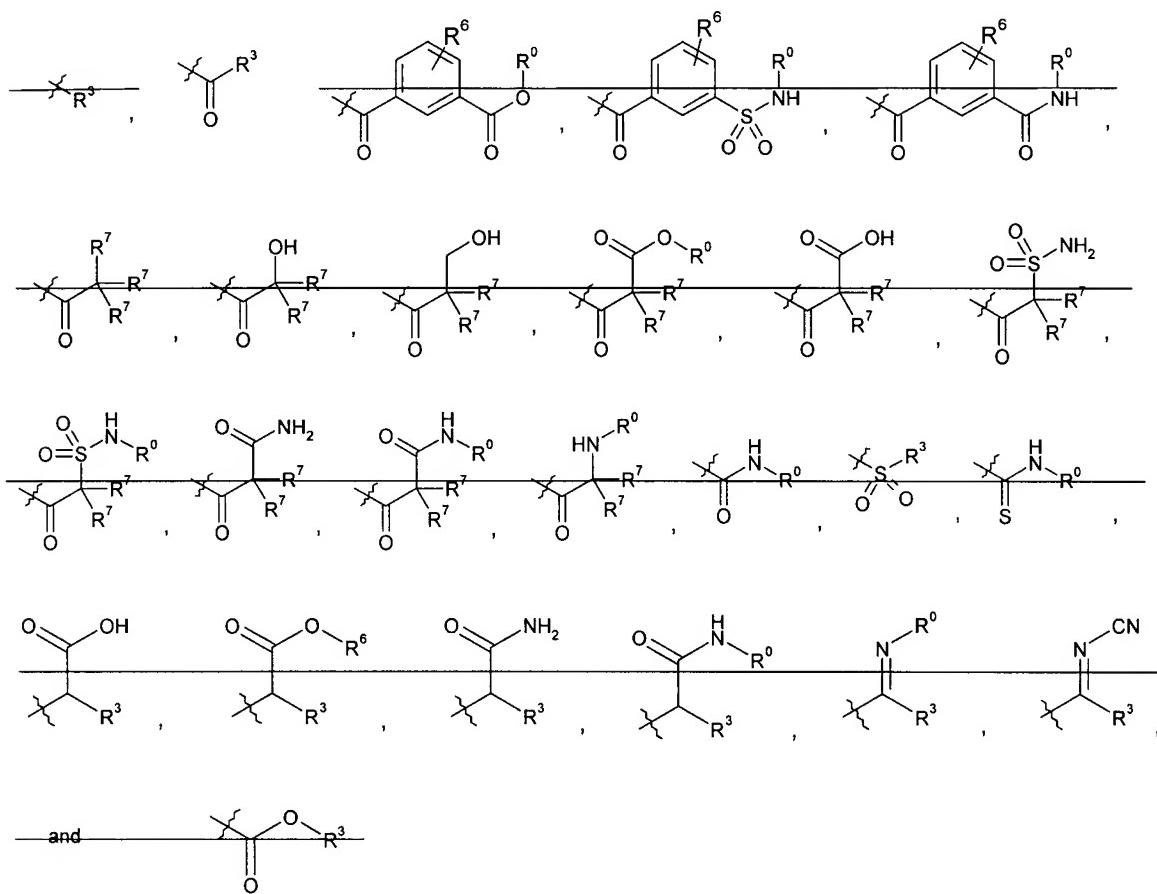
each R* is independently H, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl.

2. (Cancelled).

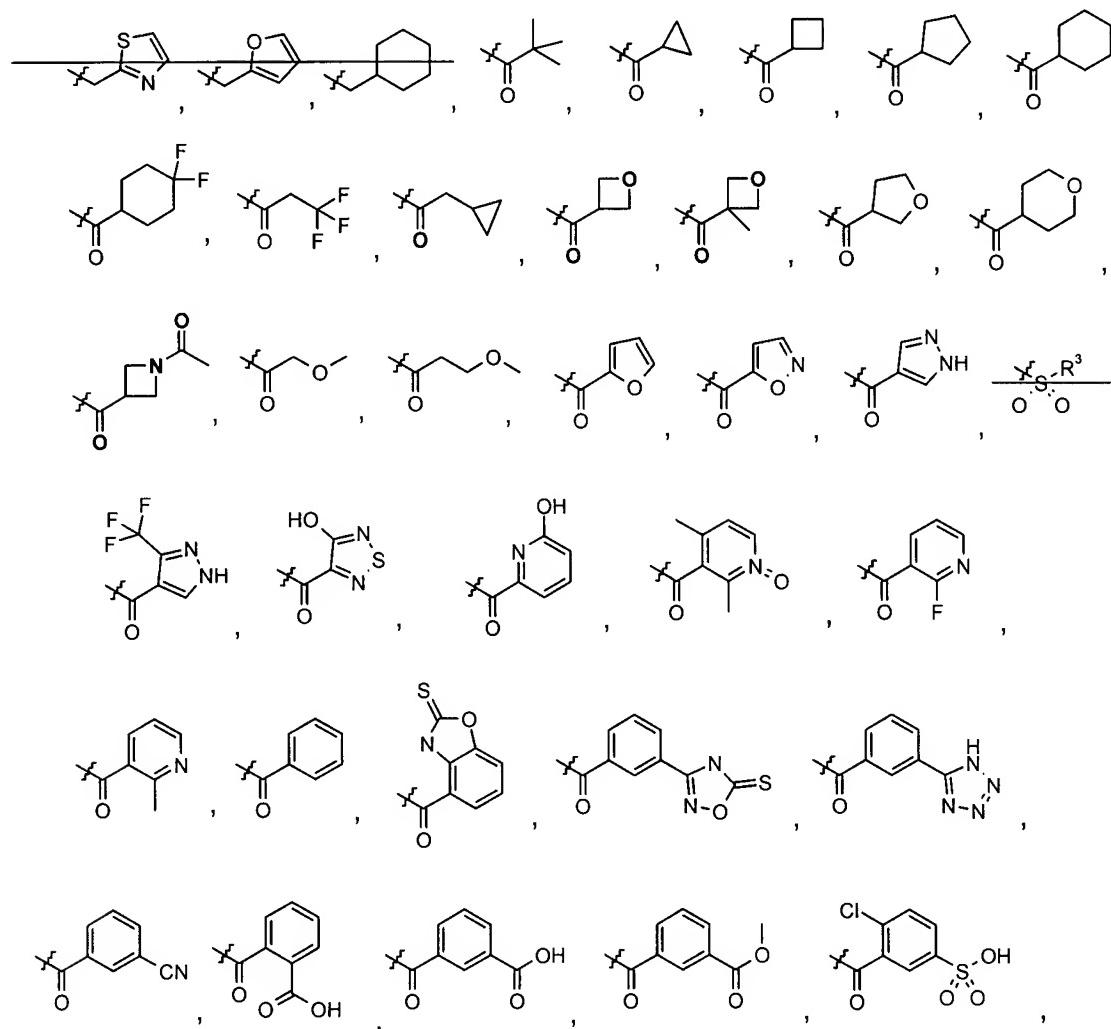
3. (Original) The compound of claim 1 wherein R¹ is phenyl mono- or di- substituted with halogen.

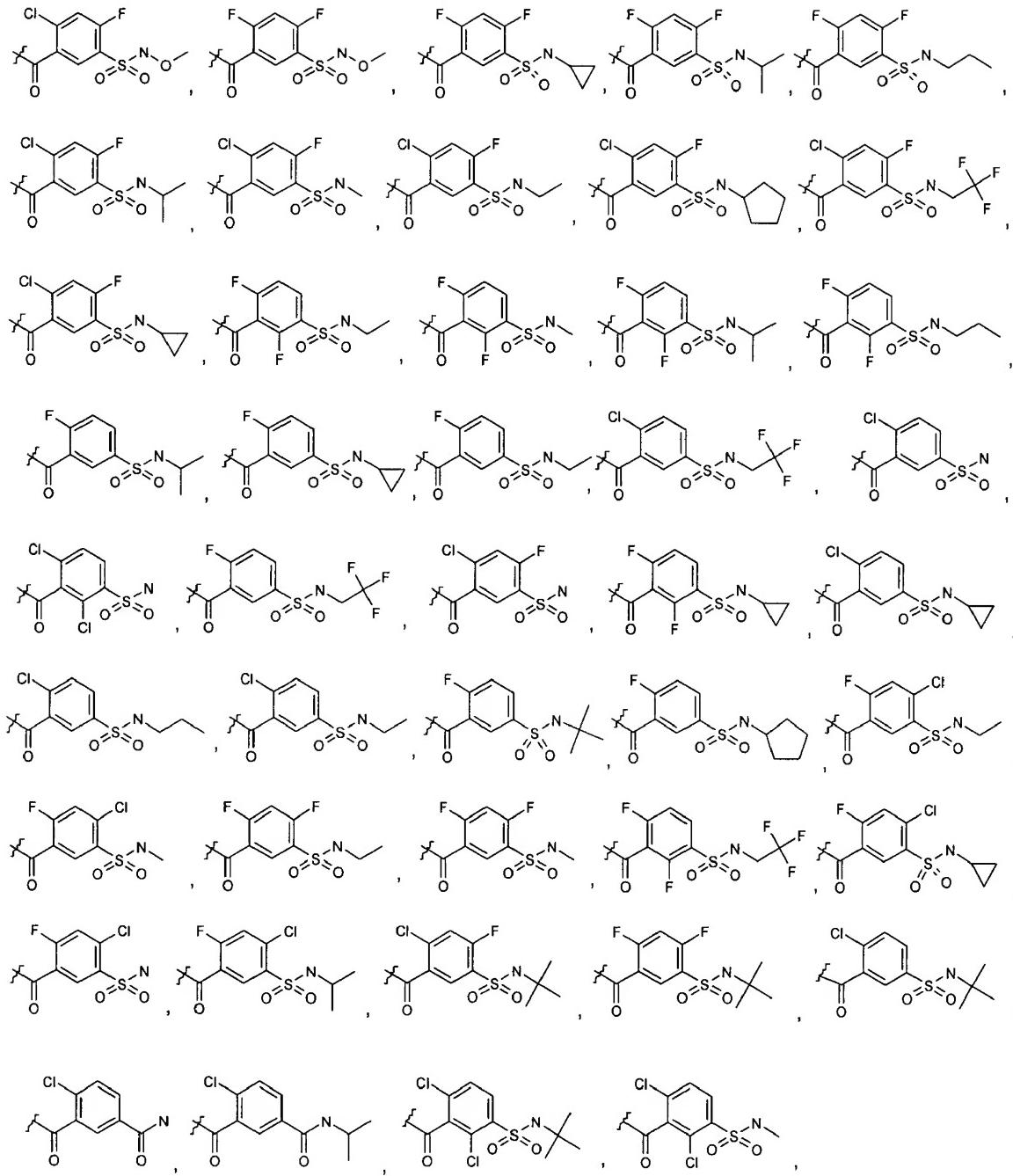
4. (Original) The compound of claim 3 wherein R¹ is phenyl di-substituted with Cl.

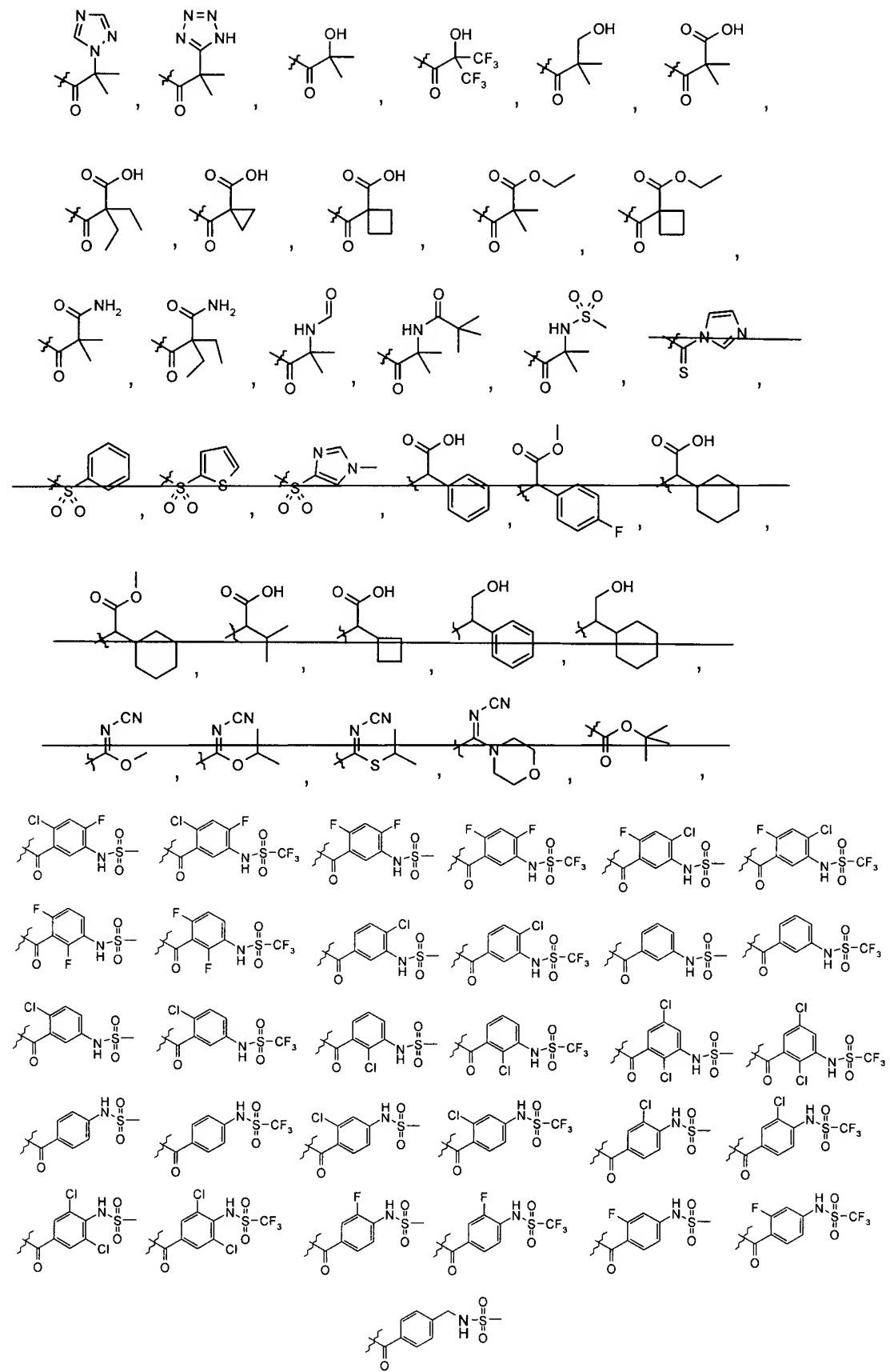
5. (Currently Amended) The compound of claim 1 wherein -(Y)_m-R³ is

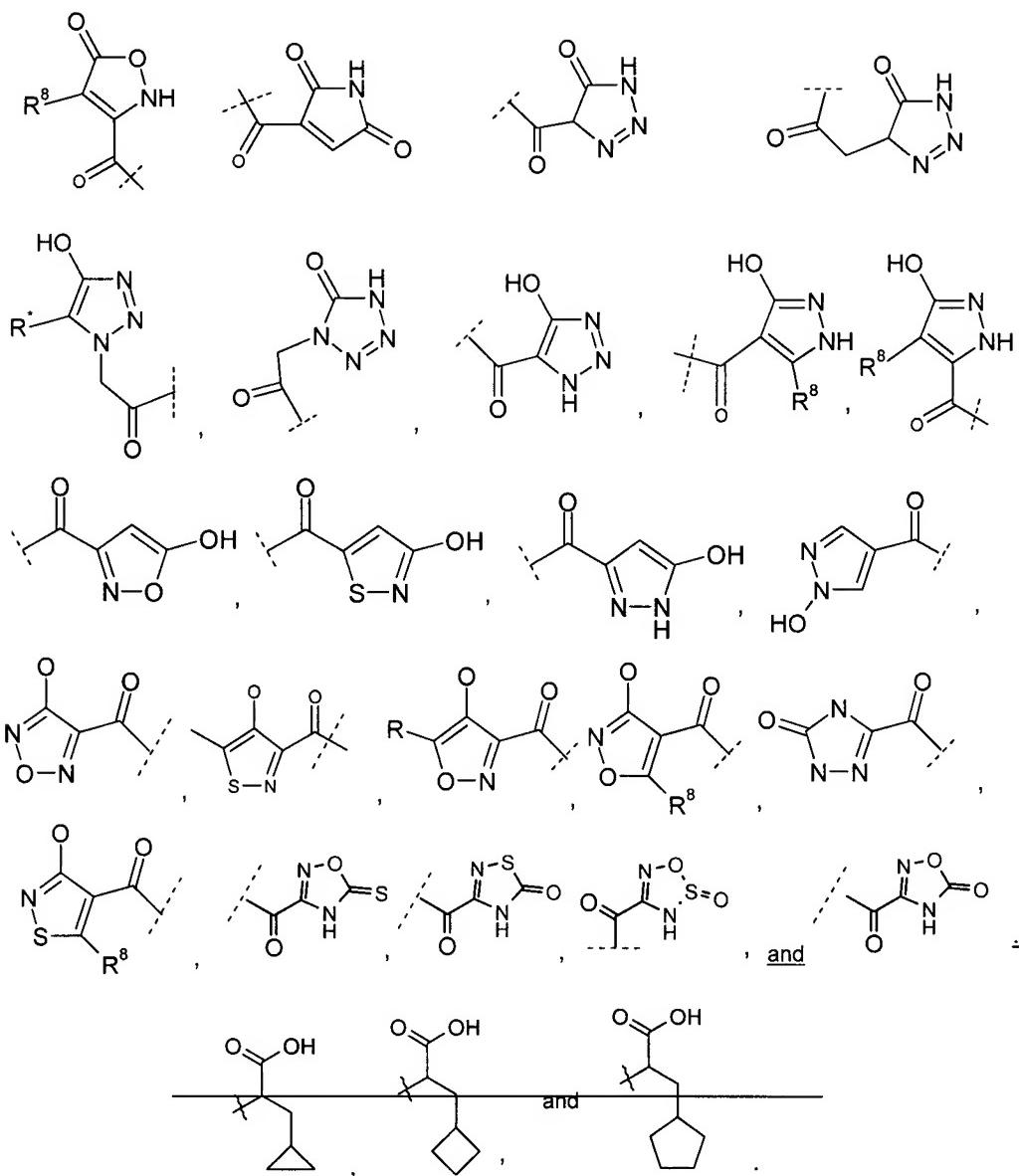


6. (Currently Amended) The compound of claim 1 wherein $-(Y)_m-R^3$ is







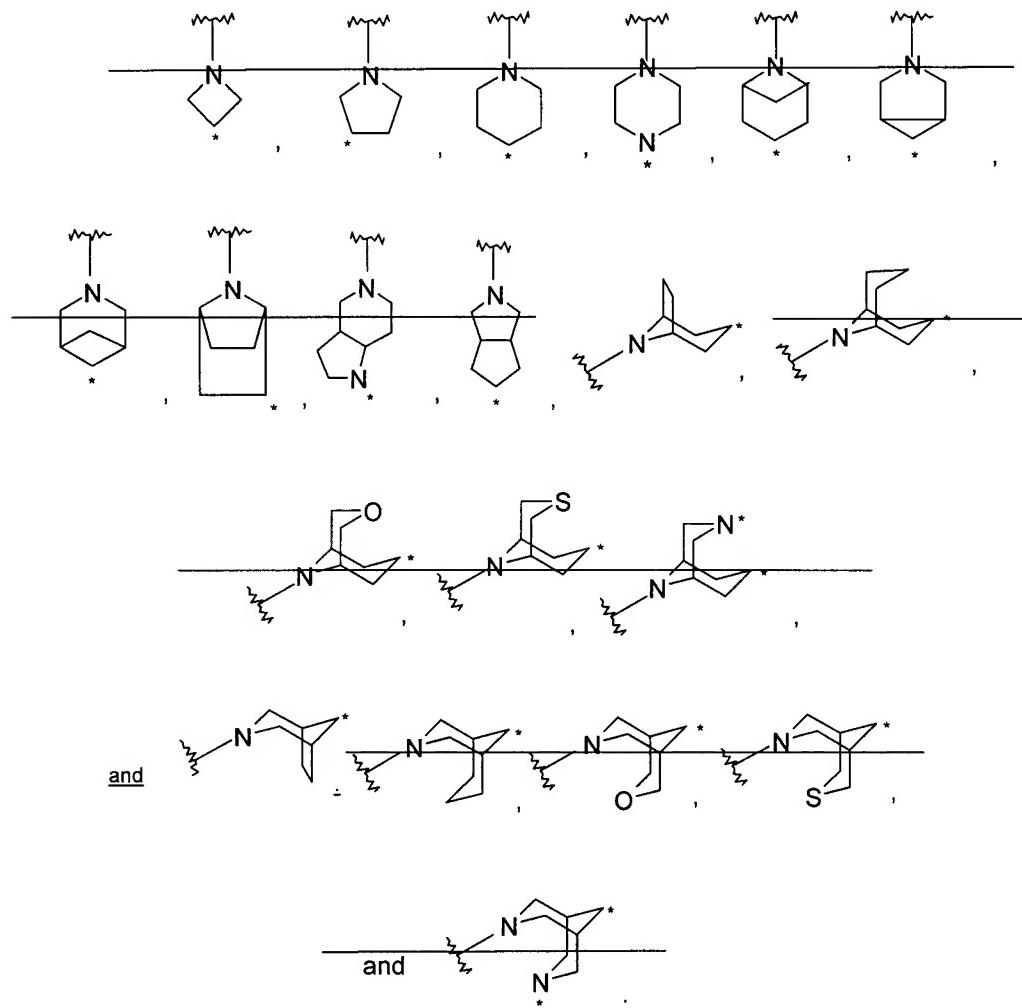


7. (Original) The compound of claim 1 wherein m is 1, Y is $-C(O)-$, and R^3 is either aryl or heteroaryl wherein either is optionally substituted, optionally substituted alkyl, or optionally substituted cycloalkyl.

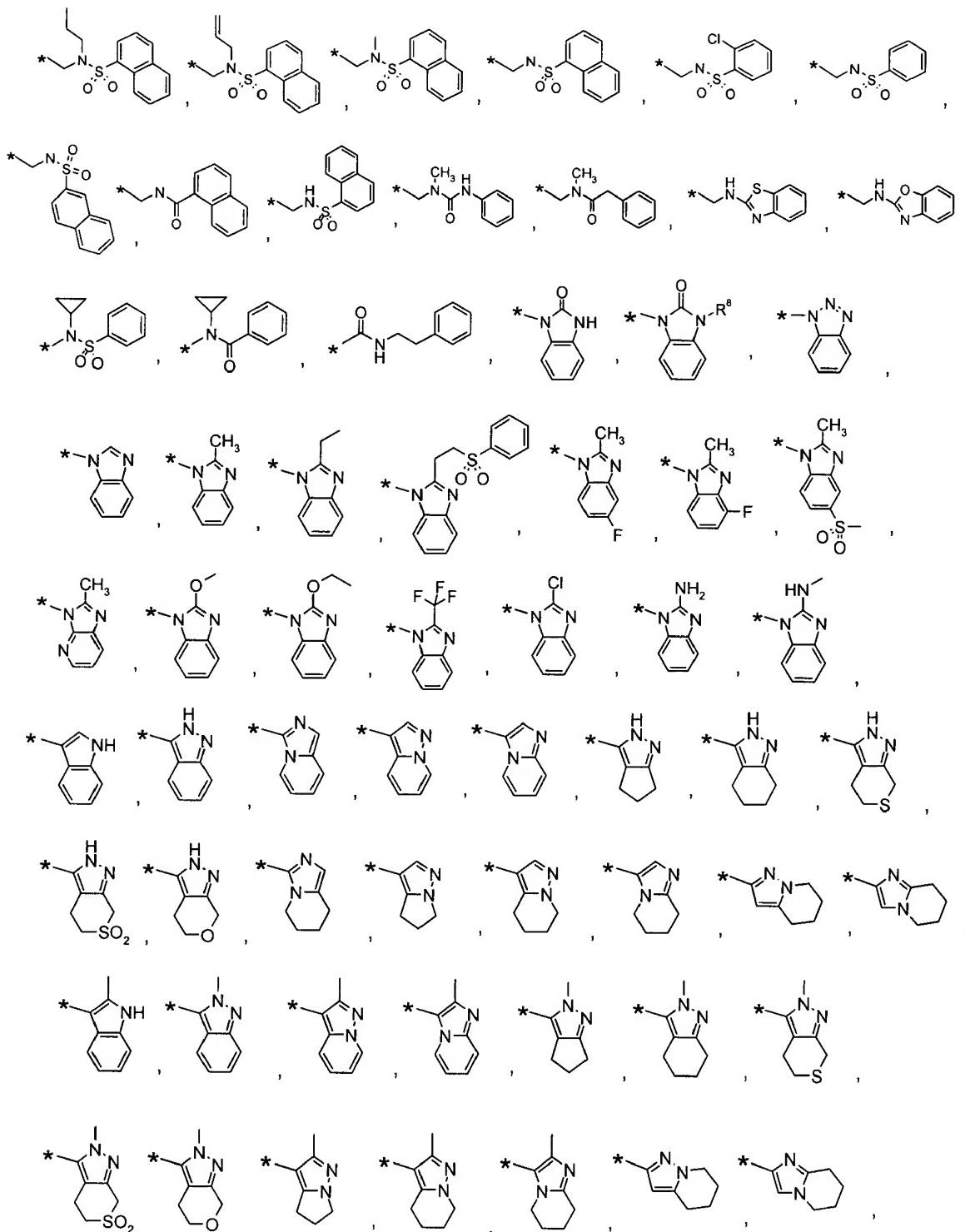
8 - 11 (Cancelled).

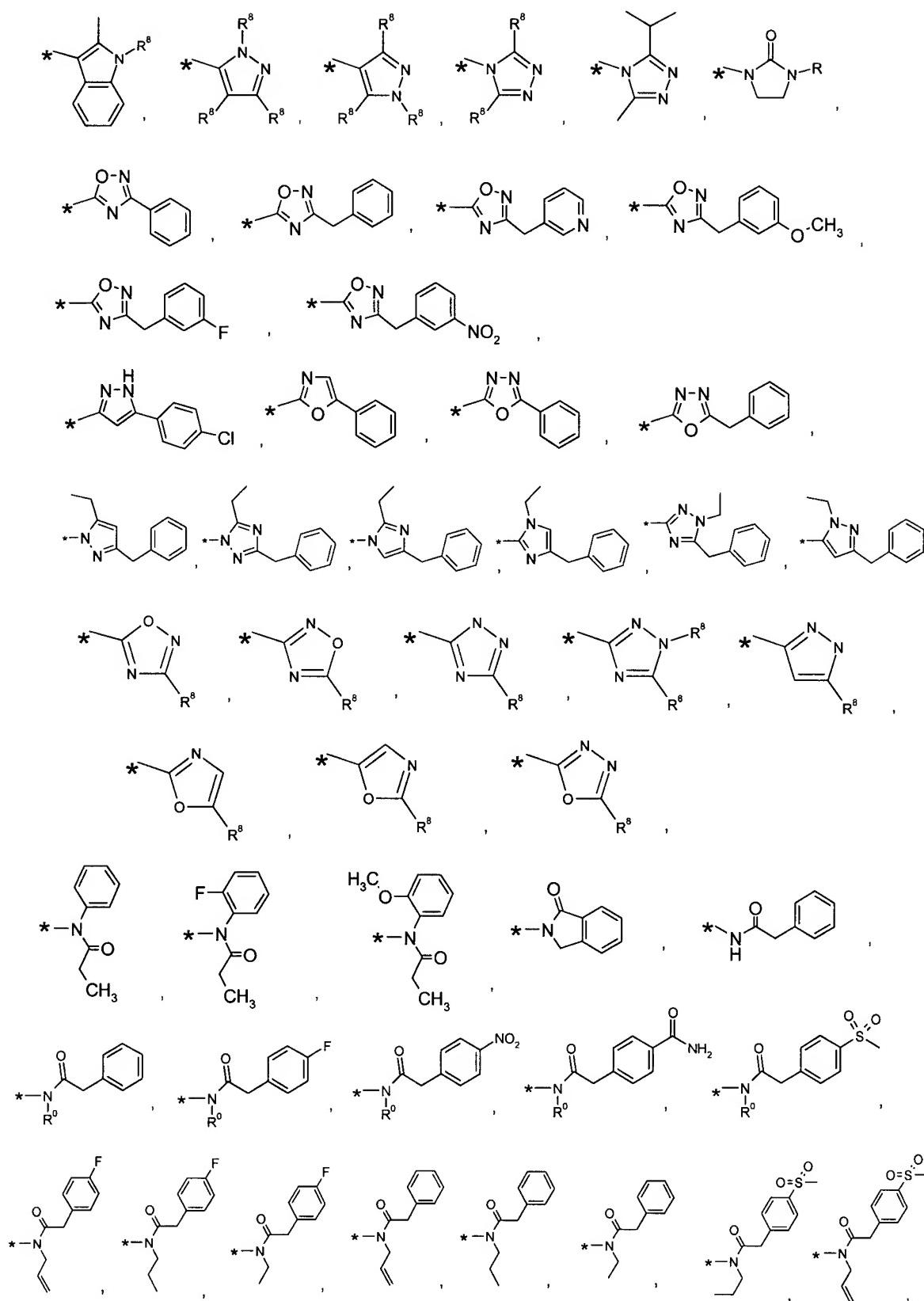
12. (Original) The compound of claim 1 where X is $-(CH_2)-$, $-(CH_2-CH_2)-$, or $-(CH_2-CH_2-CH_2)-$.
13. (Original) The compound of claim 12 wherein X is optionally substituted by one or more halogen or oxo.
14. (Original) The compound of claim 13 wherein X is disubstituted with halogen.
15. (Original) The compound of claim 14 wherein X is disubstituted with fluoro.
16. (Original) The compound of claim 15 wherein X is $-(CF_2-CH_2)-$.
17. (Cancelled).

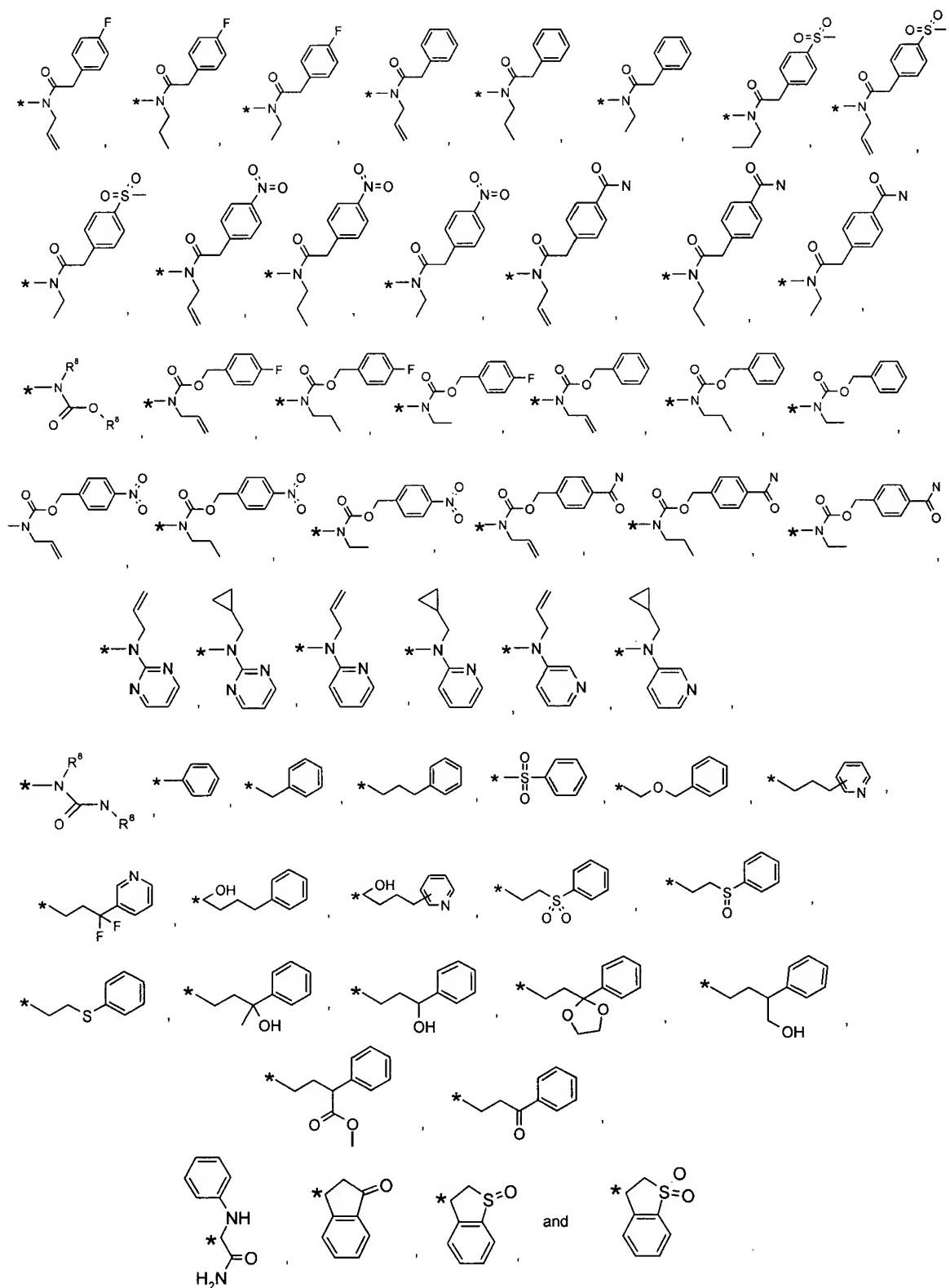
18. (Currently Amended) The compound of claim 1 wherein the A ring is selected from the following, where the asterisk (*) indicates the preferred, but not limiting, point(s) of substitution:



19. (Original) The compound of claim 18 wherein each R², with an asterisk indicating a point of substitution from ring A, independently is selected from:



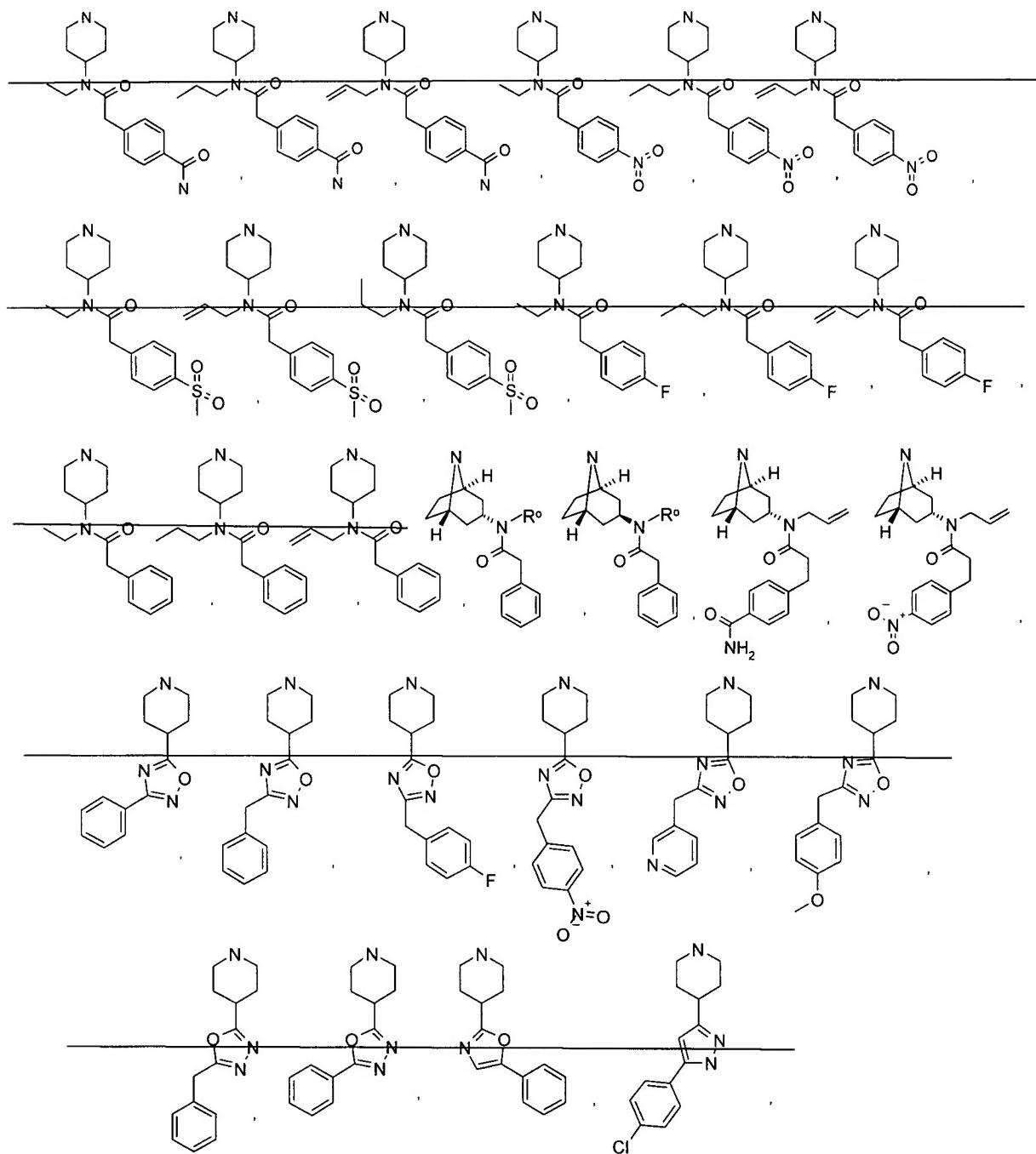


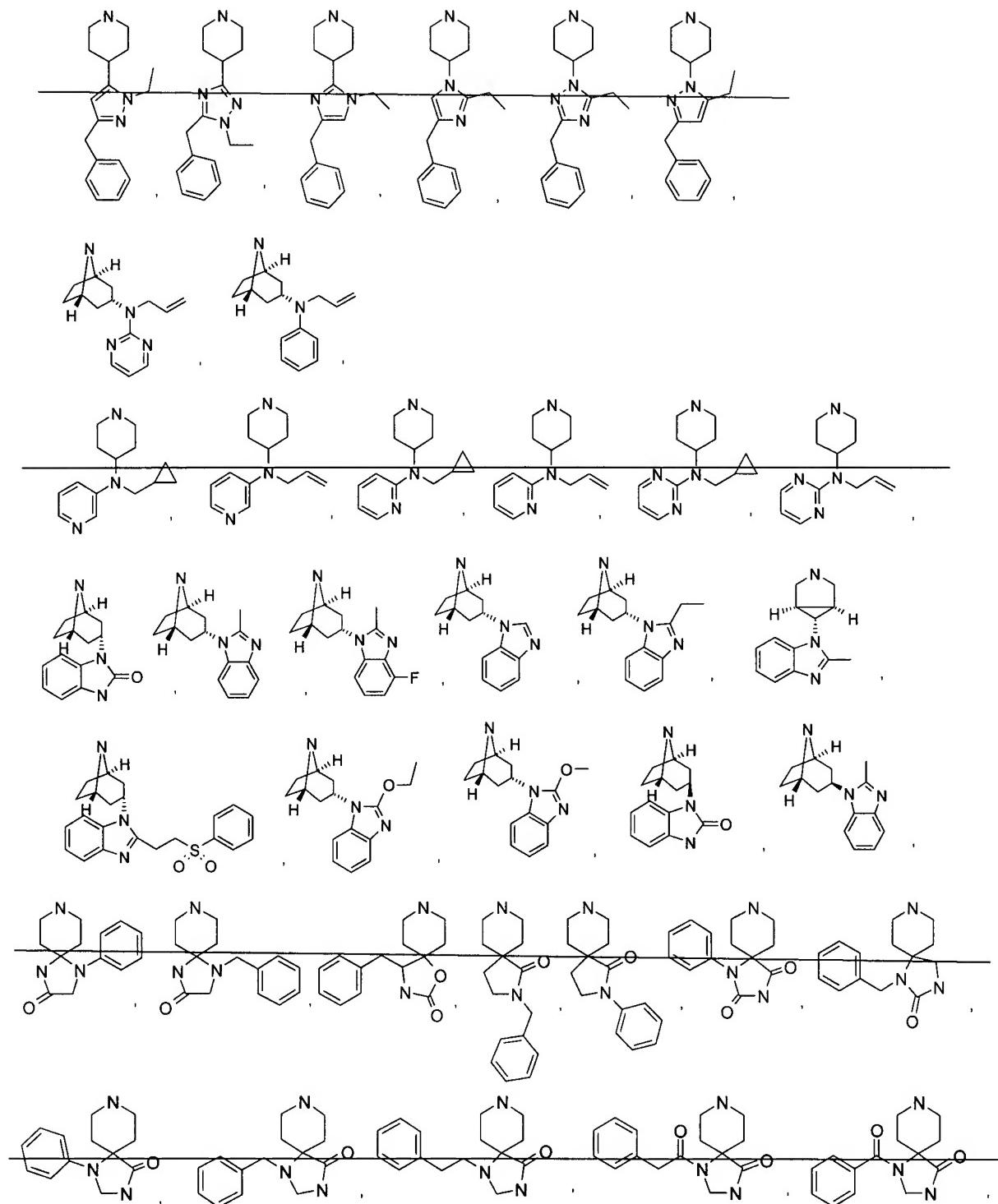


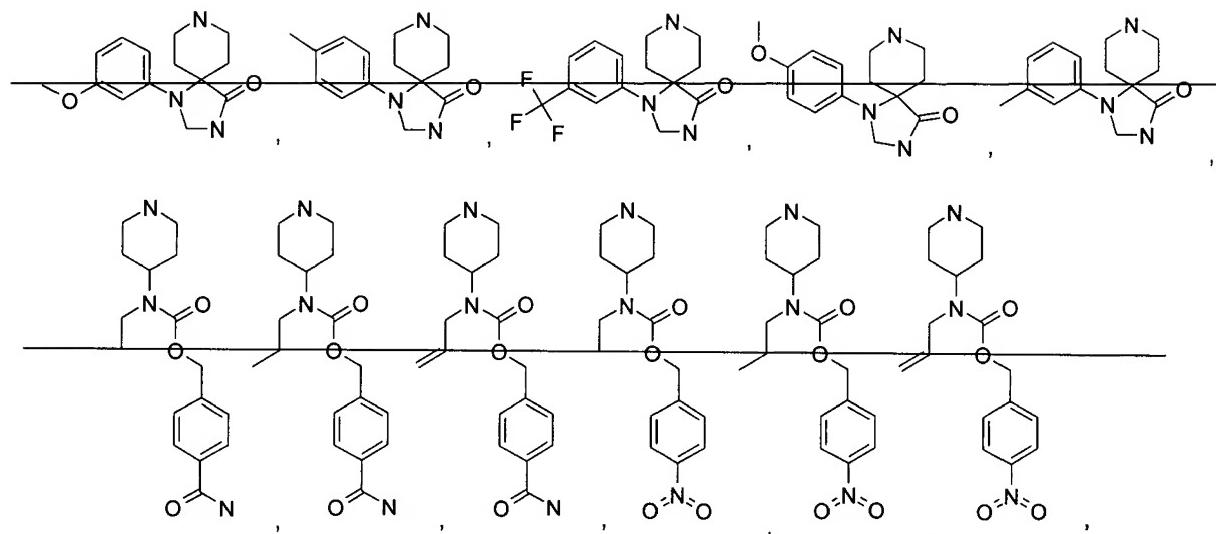
20. (Cancelled).

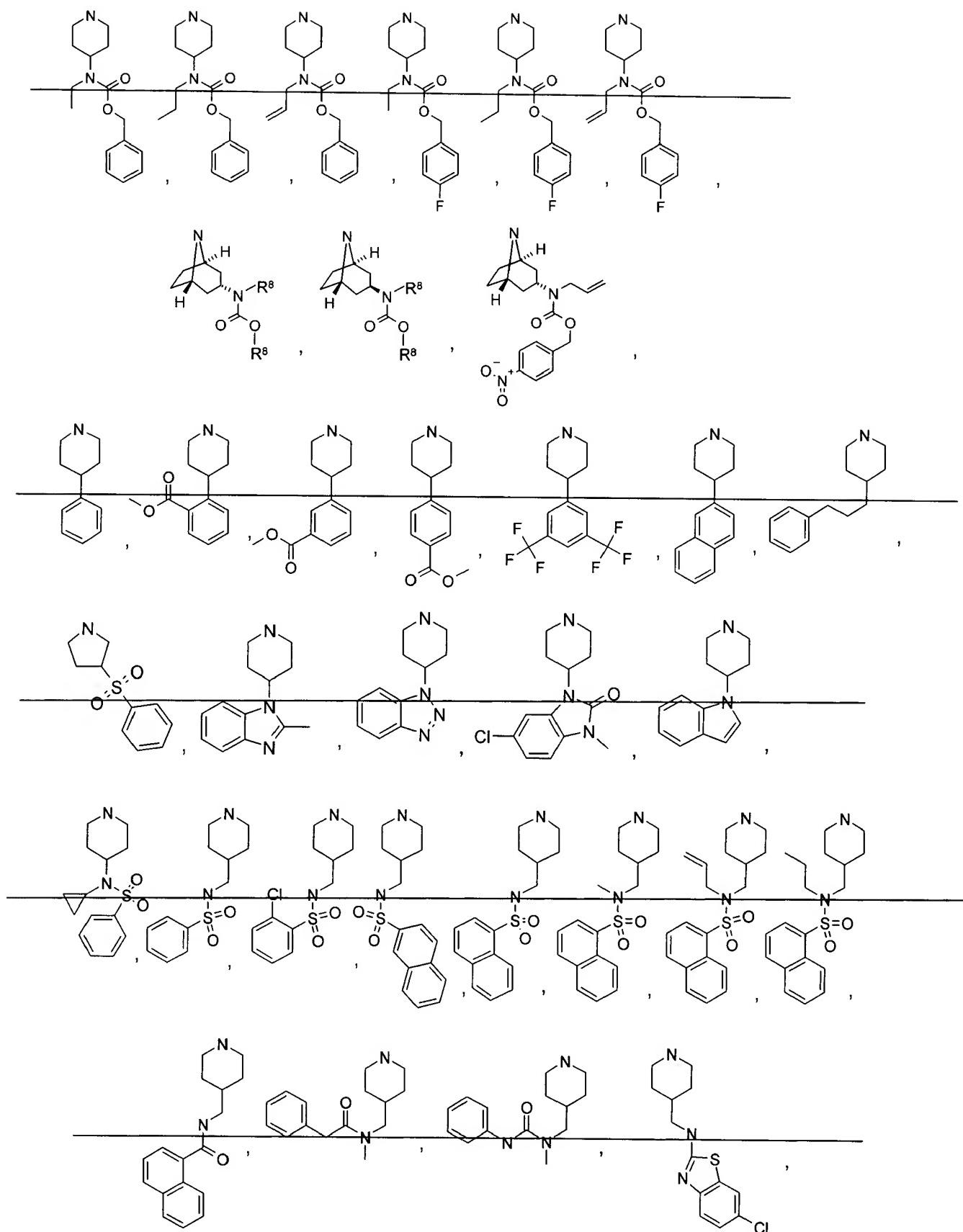
21. (Currently Amended) The compound of claim 1 wherein the A ring is tropane ~~or piperidine, either~~ optionally substituted with one or more R².

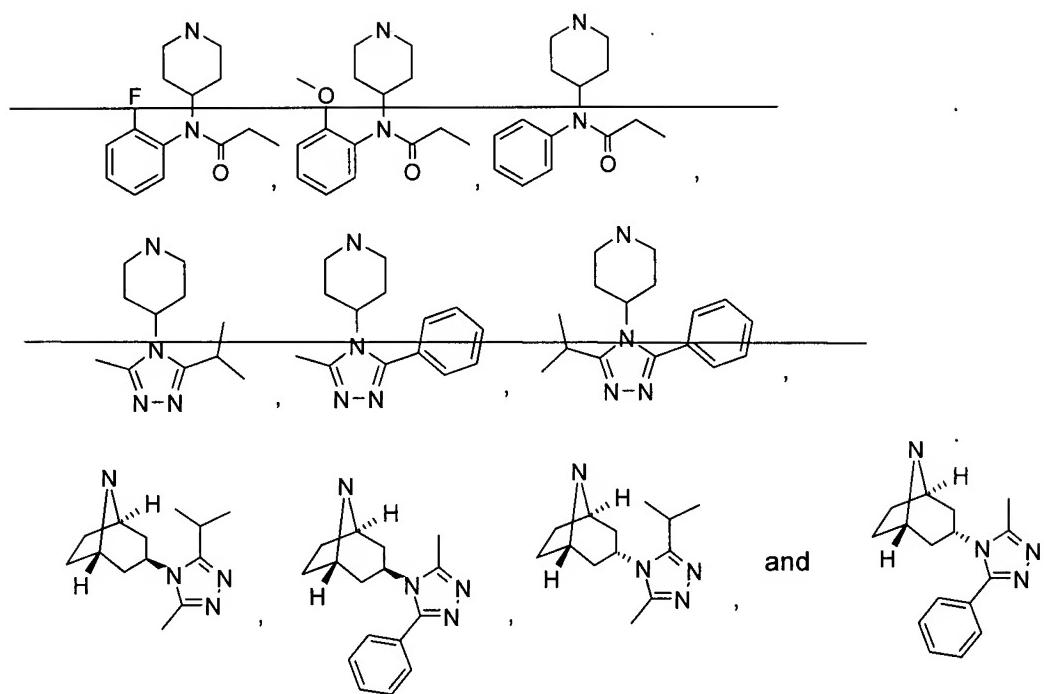
22. (Currently Amended) The compound of claim 21 wherein the A ring in combination with R² is





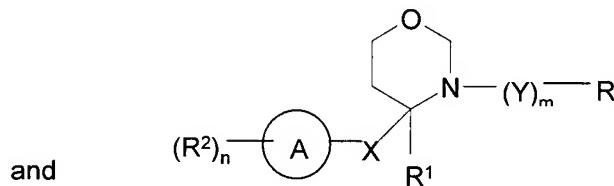
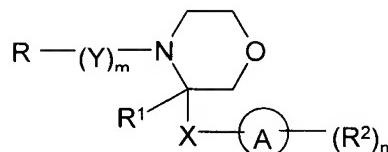
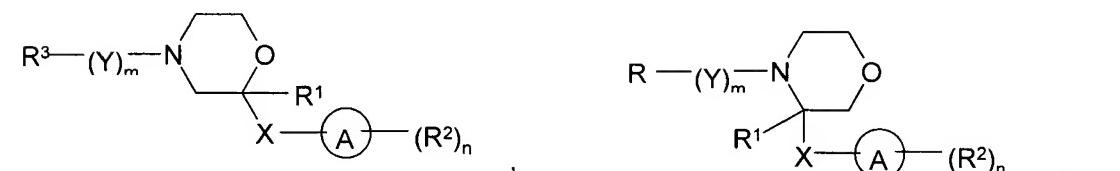
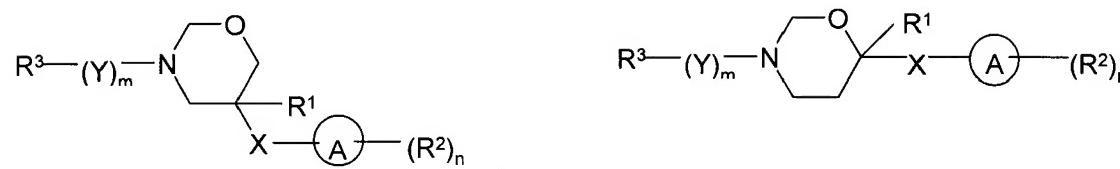
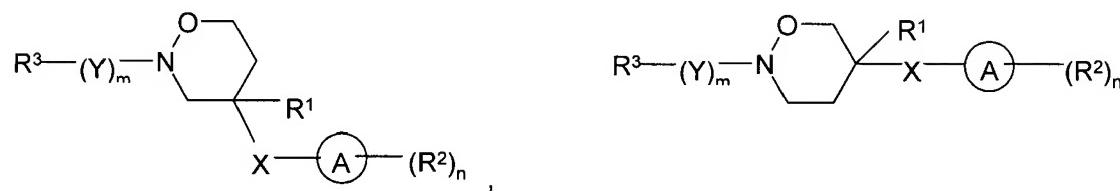






23 - 24 (Cancelled).

25. (Original) The compound of claim 1 wherein ring B is selected from the group consisting of



26. (Currently amended) A method of treatment of a viral infection in a mammal human comprising administering to said mammal human an antiviral effective amount of a compound according to claim 1.

27. (Original) A method according to claim 26 wherein the viral infection is an HIV infection.

28. (Currently amended) A method of treatment of a bacterial infection in a ~~mammal~~ human comprising administering to said ~~mammal~~ human an effective amount of a compound according to claim 1.

29. (Original) A method according to claim 28 wherein the bacterium is *Yersinia pestis*.

30. (Cancelled).

31. (Previously Amended) A compound according to claim 1 for use in medical therapy.

32-36 (Cancelled)

37. (Previously Amended) A pharmaceutical composition comprising a pharmaceutically effective amount of a compound according to claim 1 together with a pharmaceutically acceptable carrier.

38. (Previously Amended) The pharmaceutical composition according to claim 37 in the form of a tablet or capsule.

39. (Previously Amended) The pharmaceutical composition according to claim 37 in the form of a liquid.

40. (Currently amended) A method of treatment or prevention of a viral infection in a ~~mammal~~ human comprising administering to said ~~mammal~~ human a composition comprising a compound according to claim 1 and another therapeutic agent.

41. (Original) A method according to claim 40, wherein said composition comprises another therapeutic agent selected from the group

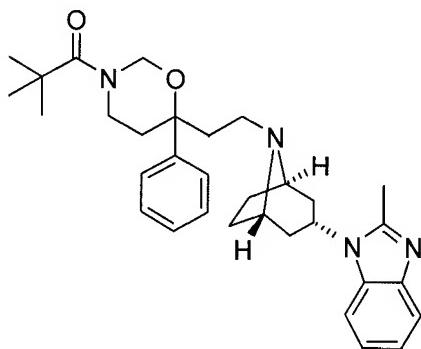
consisting of (1-alpha, 2-beta, 3-alpha)-9-[2,3-bis(hydroxymethyl)cyclobutyl]guanine [(-)BHCG, SQ-34514, lobucavir], 9-[(2R,3R,4S)-3,4-bis(hydroxymethyl)-2-oxetanosyl]adenine (oxetanocin-G), acyclic nucleosides, acyclovir, valaciclovir, famciclovir, ganciclovir, penciclovir, acyclic nucleoside phosphonates, (S)-1-(3-hydroxy-2-phosphonylmethoxypropyl)cytosine (HPMPc), [[[2-(6-amino-9H-purin-9-yl)ethoxy]methyl]phosphinylidene]bis(oxymethylene)-2,2-dimethylpropanoic acid (bis-POM PMEA, adefovir dipivoxil), [(1R)-2-(6-amino-9H-purin-9-yl)-1-methylethoxy]methyl]phosphonic acid (tenofovir), (R)-[[2-(6-Amino-9H-purin-9-yl)-1-methylethoxy]methyl]phosphonic acid bis-(isopropoxycarbonyloxymethyl)ester (bis-POC-PMPA), ribonucleotide reductase inhibitors, 2-acetylpyridine 5-[(2-chloroanilino)thiocarbonyl] thiocarbonohydrazone and hydroxyurea, nucleoside reverse transcriptase inhibitors, 3'-azido-3'-deoxythymidine (AZT, zidovudine), 2',3'-dideoxycytidine (ddC, zalcitabine), 2',3'-dideoxyadenosine, 2',3'-dideoxyinosine (ddl, didanosine), 2',3'-didehydrothymidine (d4T, stavudine), (-)-beta-D-2,6-diaminopurine dioxolane (DAPD), 3'-azido-2',3'-dideoxythymidine-5'-H-phosphophonate (phosphonovir), 2'-deoxy-5-iodo-uridine (idoxuridine), (-)-cis-1-(2-hydroxymethyl)-1,3-oxathiolane 5-yl)-cytosine (lamivudine), cis-1-(2-hydroxymethyl)-1,3-oxathiolan-5-yl)-5-fluorocytosine (FTC), 3'-deoxy-3'-fluorothymidine, 5-chloro-2',3'-dideoxy-3'-fluorouridine, (-)-cis-4-[2-amino-6-(cyclopropylamino)-9H-purin-9-yl]-2-cyclopentene-1-methanol (abacavir), 9-[4-hydroxy-2-(hydroxymethyl)but-1-yl]-guanine (H2G), ABT-606 (2HM-H2G) ribavirin, protease inhibitors, indinavir, ritonavir, nelfinavir, amprenavir, saquinavir, fosamprenavir, (R)-N-tert-butyl-3-[(2S,3S)-2-hydroxy-3-N-[(R)-2-N-(isoquinolin-5-yloxyacetyl)amino-3-methylthiopropanoyl]amino-4-phenylbutanoyl]-5,5-dimethyl-1,3-thiazolidine-4-carboxamide (KNI-272), 4R-(4alpha,5alpha,6beta)-1,3-bis[(3-aminophenyl)methyl]hexahydro-5,6-dihydroxy-4,7-bis(phenylmethyl)-2H-1,3-diazepin-2-one dimethanesulfonate (mozenavir), 3-[1-[3-[2-(5-trifluoromethylpyridinyl)sulfonylamino]phenyl]propyl]-4-hydroxy-6alpha-phenethyl-6beta-propyl-5,6-dihydro-2-pyranone (tipranavir), N'-[2(S)-Hydroxy-3(S)-[N-(methoxycarbonyl)-l-tert-leucylamino]-4-phenylbutyl-N alpha-

(methoxycarbonyl)-N'-(4-(2-pyridyl)benzyl]-L- tert-leucylhydrazide (BMS-232632), 3-(2(S)-Hydroxy-3(S)-(3-hydroxy-2-methylbenzamido)-4-phenylbutanoyl)-5,5-dimethyl-N-(2-methylbenzyl)thiazolidine-4(R)-carboxamide (AG-1776), N-(2(R)-hydroxy-1(S)-indanyl)-2(R)-phenyl-methyl-4(S)-hydroxy-5-(1-(1-(4-benzo[b]furanylmethyl)-2(S)-N'-(tert-butylcarboxamido)piperazinyl)pentanamide (MK-944A), interferons, α -interferon, renal excretion inhibitors, probenecid, nucleoside transport inhibitors, dipyridamole, pentoxifylline, N-acetylcysteine (NAC), Procysteine, α -trichosanthin, phosphonoformic acid, immunomodulators, interleukin II, thymosin, granulocyte macrophage colony stimulating factors, erythropoetin, soluble CD₄ and genetically engineered derivatives thereof, non-nucleoside reverse transcriptase inhibitors (NNRTIs), nevirapine (BI-RG-587), alpha-((2-acetyl-5-methylphenyl)amino)-2,6-dichloro-benzeneacetamide (loviride), 1-[3-(isopropylamino)-2-pyridyl]-4-[5-(methanesulfonamido)-1H-indol-2-ylcarbonyl]piperazine monomethanesulfonate (delavirdine), (10R, 11S, 12S)-12-hydroxy-6, 6, 10, 11-tetramethyl-4-propyl-11,12-dihydro-2H, 6H, 10H-benzo(1, 2-b:3, 4-b':5, 6-b")tropyran-2-one ((+) calanolide A), (4S)-6-Chloro-4-[1E]-cyclopropylethenyl)-3,4- dihydro-4-(trifluoromethyl)-2(1H)-quinazolinone (DPC-083), (S)-6-chloro-4-(cyclopropylethynyl)-1,4-dihydro-4-(trifluoromethyl)-2H-3,1-benzoxazin-2-one (efavirenz, DMP 266), 1-(ethoxymethyl)-5-(1-methylethyl)-6-(phenylmethyl)-2,4(1H,3H)-pyrimidinedione (MKC-442), and 5-(3,5-dichlorophenyl)thio-4-isopropyl-1-(4-pyridyl)methyl-1H-imidazol-2-ylmethyl carbamate (capravirine), glycoprotein 120 antagonists, PRO-2000, PRO-542, 1,4-bis[3-[(2, 4- dichlorophenyl)carbonylamino]-2-oxo-5,8-disodiumsulfanyl]naphthalyl-2, 5-dimethoxyphenyl-1, 4-dihydrazone (FP-21399), cytokine antagonists, reticulose (Product-R), 1,1'-azobis-formamide (ADA), 1,11-(1,4-phenylenebis(methylene))bis-1,4,8,11-tetraazacyclotetradecane octahydrochloride (AMD-3100), integrase inhibitors, and fusion inhibitors.

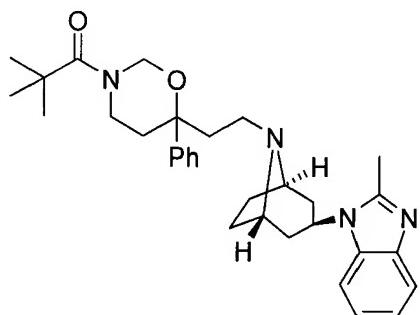
42. (Currently Amended) A method of treatment of a viral infection in a ~~mammal~~ human comprising administering to said ~~mammal~~ human a composition comprising a compound according to claim 1 and ritonavir.

43. (New) A compound according to Claim 1 selected from the group consisting of:

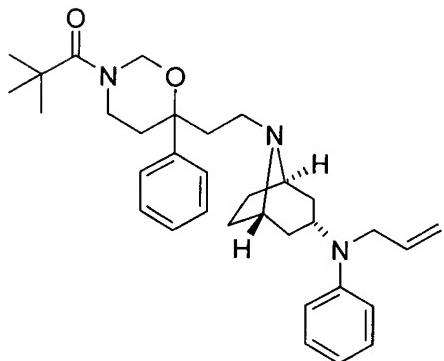
1-((1*R*,5*S*)-8-{2-[3-(2,2-dimethylpropanoyl)-6-phenyl-1,3-oxazinan-6-yl]ethyl}-8-azabicyclo[3.2.1]oct-3-yl)-2-methyl-1*H*-benzimidazole;



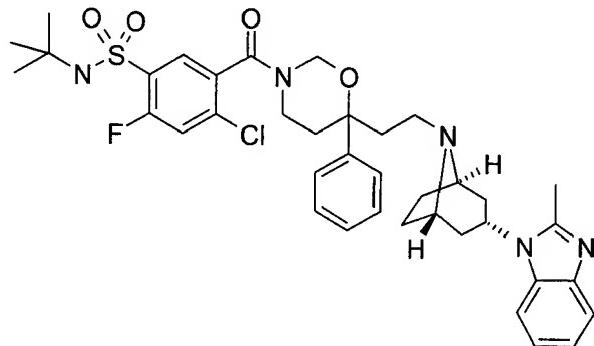
1-((1*R*,5*S*)-8-{2-[3-(2,2-dimethylpropanoyl)-6-phenyl-1,3-oxazinan-6-yl]ethyl}-8-azabicyclo[3.2.1]oct-3-yl)-2-methyl-1*H*-benzimidazole;



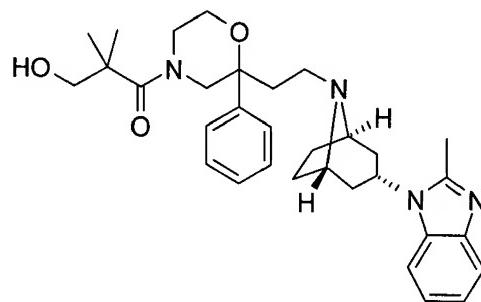
(1*R*,5*S*)-*N*-allyl-8-{2-[3-(2,2-dimethylpropanoyl)-6-phenyl-1,3-oxazinan-6-yl]ethyl}-*N*-phenyl-8-azabicyclo[3.2.1]octan-3-amine;



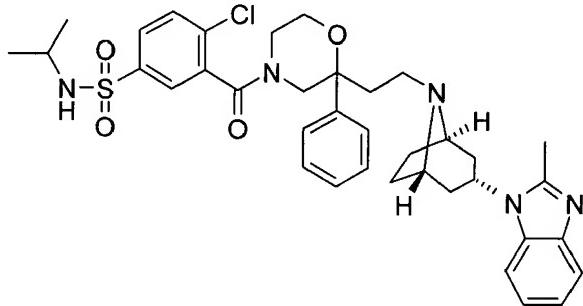
N-(tert-butyl)-4-chloro-2-fluoro-5-[(6-{2-[(1R,5S)-3-(2-methyl-1H-benzimidazol-1-yl)-8-azabicyclo[3.2.1]oct-8-yl]ethyl}-6-phenyl-1,3-oxazinan-3-yl)carbonyl] benzenesulfonamide;



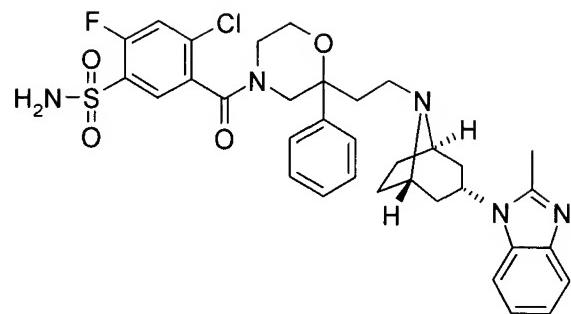
2,2-dimethyl-3-(2-{2-[(1R,5S)-3-(2-methyl-1H-benzimidazol-1-yl)-8-azabicyclo [3.2.1]oct-8-yl]ethyl}-2-phenylmorpholin-4-yl)-3-oxopropan-1-ol;



4-chloro-N-isopropyl-3-[(2-{2-[(1R,5S)-3-(2-methyl-1H-benzimidazol-1-yl)-8-azabicyclo[3.2.1]oct-8-yl]ethyl}-2-phenylmorpholin-4-yl)carbonyl]benzene sulfonamide;



4-chloro-2-fluoro-5-[(2-{2-[(1R,5S)-3-(2-methyl-1H-benzimidazol-1-yl)-8-azabicyclo[3.2.1]oct-8-yl]ethyl}-2-phenylmorpholin-4-yl)carbonyl]benzene sulfonamide;



and

1-((1*R*,5*S*)-8-{2-[4-(2,2-dimethylpropanoyl)-2-phenylmorpholin-2-yl]ethyl}-8-azabicyclo[3.2.1]oct-3-yl)-2-methyl-1*H*-benzimidazole;

